

## NEAR OPTIMAL FAIRNESS BACK OFF METHODS AND SYSTEMS

### ABSTRACT OF THE DISCLOSURE

A Near Optimal Fairness (NOF) algorithm is disclosed for resolving data collisions in a network shared by a plurality of users. The NOF algorithm calculates an optimal back-off or contention window which is broadcast to users competing for system bandwidth. The NOF algorithm handles data contention in cycles and guarantees that each user competing for system bandwidth within a cycle will make a successful reservation before the cycle ends and a new cycle begins. The size of the back-off window is preferably equal to the number of successful reservations in the previous cycle, and functions as an estimate of the number of competing users in the current cycle.

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